

L Number	Hits	Search Text	DB	Time stamp
1	1	5912257.pn.	USPAT; US-PGPUB; EPO	2003/11/14 15:37
2	413	ceramic same vitro\$8	USPAT; US-PGPUB; EPO	2003/11/14 15:38
3	0	5912257.pn. and (ceramic same vitro\$8)	USPAT; US-PGPUB; EPO	2003/11/14 15:38
4	186	vitroceramic (vitro adj2 ceramic)	USPAT; US-PGPUB; EPO	2003/11/14 15:39
5	0	(vitroceramic (vitro adj2 ceramic)) same data	USPAT; US-PGPUB; EPO	2003/11/14 15:40
6	5	(vitroceramic (vitro adj2 ceramic)) same (stor\$4 record\$4 memory)	USPAT; US-PGPUB; EPO	2003/11/14 15:42
7	2	((vitroceramic (vitro adj2 ceramic)) and (data near6 (stor\$4 record\$4 memory))) not ((vitroceramic (vitro adj2 ceramic)) same (stor\$4 record\$4 memory))	USPAT; US-PGPUB; EPO	2003/11/14 15:43

*fast & full*  
**SEARCH REQUEST FORM**

Scientific and Technical Information Center

Requester's Full Name: Gautam Patel Examiner #: \_\_\_\_\_ Date: 11-14-03 4:15  
 Art Unit: \_\_\_\_\_ Phone Number 30 \_\_\_\_\_ Serial Number: 09424272  
 Mail Box and Bldg/Room Location: \_\_\_\_\_ Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched.

Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

*Vitroceramic  
memory or storage  
and 3D*

*2 May 1997*

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<b>STAFF USE ONLY</b>		Type of Search	Vendors and cost where applicable
Searcher:	<u>Plynch</u>	NA Sequence (#)	STN _____
Searcher Phone #:	<u>306-0255</u>	AA Sequence (#)	Dialog <input checked="" type="checkbox"/>
Searcher Location:	<u>YLC 23C/B</u>	Structure (#)	Questel/Orbit _____
Date Searcher Picked Up:	<u>11-14</u>	Bibliographic	Dr. Link _____
Date Completed:	<u>11-14</u>	Litigation	Lexis/Nexis _____
Searcher Prep & Review Time:		Fulltext	Sequence Systems _____
Clerical Prep Time:		Patent Family	WWW/Internet _____
Online Time:		Other	Other (specify) _____

## United States Patent [10]

Denk et al.

[11] Patent Number: 5,034,613

[43] Date of Patent: Jul. 23, 1991

## [34] TWO-PHOTON LASER MICROSCOPY

[73] Inventor: Winfried Denk, Zurich, Switzerland;  
James P. Strickler, West W., Webb,  
both of Ithaca, N.Y.

[73] Assignee: Cornell Research Foundation, Inc.,  
Ithaca, N.Y.

[21] Appl. No.: 436,048

[22] Filed: Nov. 14, 1989

[51] Int. Cl.: G01N 21/39; G01J 3/00

[52] U.S. Cl.: 250/458.1; 250/459.1;  
250/461.1; 250/462.1; 356/318[56] Field of Search: 250/458.1; 451.1; 462.1;  
250/423 P; 459.1; 356/318; 356/327, 106

## [96] References Cited

## U.S. PATENT DOCUMENTS

- 4,452,237 9/1983 Illescas et al. .... 165/101  
 4,467,008 8/1983 Schmidt et al. .... 250/93  
 4,466,030 8/1984 Swanson et al. .... 165/156  
 4,471,470 9/1984 Swanson et al. .... 165/127  
 4,631,281 12/1986 Carlson ..... 165/93  
 4,734,578 3/1988 Horiuchi ..... 250/234  
 4,786,170 11/1988 Grobber ..... 356/318  
 4,791,310 12/1988 Henig et al. .... 250/458.1  
 4,792,341 11/1988 Kozlowski et al. .... 8/103  
 4,827,125 5/1988 Goetzke ..... 250/234  
 4,838,679 6/1989 Ellis ..... 165/206  
 4,853,226 9/1989 Henig et al. .... 356/6.5  
 4,877,365 10/1989 Dandliker et al. .... 250/459.1  
 4,887,721 12/1989 Martin et al. .... 250/279

## OTHER PUBLICATIONS

- Chawla et al., "On the Possibility of Gas Temperature Measurement Using Two Photon Excitation", Dept. of Applied Physics, Tokyo Univ. of Agriculture & Technology, 21-27 May 1979, pp. 323-328.  
 Fräzler et al., "A Spectrometer for Semiautomatic Two Photon Fluorescence Spectroscopy", Journal of Physics E: Scientific Inst., 1975, vol. 8, pp. 430-432.  
 Siompa et al., "A Laser Flying Spot Scanner for Use in Automated Fluorescence Antibody Instrumentation",

Journal of the Assoc. for the Advancement of Med. Instrumentation, vol. 6, No. 3, 1972, pp. 230-234.  
 "Three Dimensional Optical Storage Memory", Particulars of Science, vol. 245, pp. 843-845, Aug. 21, 1989.

"Theory and Practice of Scanning Optical Microscopy", T. Wilson and C. Shepard, Academic Press, London, 1974, pp. 8 and 9.

Primary Examiner—Constantine Hammar  
 Assistant Examiner—Edward J. Gilke  
 Attorney, Agent or Firm—Jones, Toliar & Cooper

## [57] ABSTRACT

A laser scanning microscope produces molecular excitation in a target material by simultaneous absorption of two photons to thereby provide intrinsic three-dimensional resolution. Fluorophores having single photon absorption in the short (ultraviolet or visible) wavelength range are excited by a stream of strongly focused subpicosecond pulses of laser light of relatively long (red or infrared) wavelength range. The fluorophores absorb at about one half the laser wavelength to produce fluorescent images of living cells and other microscopic objects. The fluorescent emission from the fluorophores increases quadratically with the excitation intensity so that by strongly focusing the laser light, fluorescence as well as photobleaching are confined to the vicinity of the focal plane. This feature provides depth of field resolution comparable to that produced by confocal laser scanning microscopes, and in addition reduces photobleaching. Scanning of the laser beam, by a laser scanning microscope, allows construction of images by collecting two-photon excited fluorescence from each point in the scanned object while still satisfying the requirement for very high excitation intensity obtained by focusing the laser beam and by pulse train comprising the beam. The focused pulses also provide three-dimensional spatially resolved photochemistry which is particularly useful in photolytic release of caged effector molecules.

21 Claims, 7 Drawing Sheets



Desktop

Start

Slide Show

Inbox - Microsoft Outlook

Serial Number Information

EAST - [back.wsp.1]

EAST Browser - L2: [..]

File 344:Chinese Patents Abs Aug 1985-2003/Apr

(c) 2003 European Patent Office

File 347:JAPIO Oct 1976-2003/Jul(Updated 031105)

(c) 2003 JPO & JAPIO

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200373

(c) 2003 Thomson Derwent

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Set	Items	Description
S1	3	VITROCERAMIC AND (MEMORY OR STORAGE)
S2	194665	3D OR (THREE OR THIRD OR 3) (3N) (DIMENSION? OR SHAPE? OR MO- DEL? OR REPRESENTATION? OR SCENE?)
S3	2	S1 AND S2
S4	2	VITROCERAMIC(5N) (MEMORY OR STORAGE)
S5	28	VITROCERAMIC
S6	2	S2 AND S5
S7	3	S1 OR S3 OR S4 OR S6

7/3,K/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX  
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013371018 \*\*Image available\*\*

WPI Acc No: 2000-542957/200049

XRAM Acc No: C00-161497

XRPX Acc No: N00-401649

Data storage and retrieval system for storing and retrieving information, has coherent light beam generators and optical positioning system

Patent Assignee: PAVEL E (PAVE-I)

Inventor: PAVEL E

Number of Countries: 082 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200031733	A1	20000602	WO 98R021	A	19981125	200049 B
AU 9915797	A	20000613	WO 98R021	A	19981125	200049
			AU 9915797	A	19981125	

Priority Applications (No Type Date): WO 98R021 A 19981125

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200031733 A1 E 63 G11B-007/24

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

AU 9915797 A G11B-007/24 Based on patent WO 200031733

Data storage and retrieval system for storing and retrieving information, has coherent light beam generators and optical...

Abstract (Basic):

... A data storage and retrieval system comprises two coherent light beam generators (5, 6) for generating two light...

...for directing the light beams to irradiate an individually selected volume (8) of an optical memory (1) to produce a change in fluorescence characteristics in the selected volume.

... INDEPENDENT CLAIMS are also included for a) method for retrieving data from a fluorescent photosensitive three - dimensional optical memory comprising generating two reading light beams, exciting at least an individually selected volume of the optical memory with the light beams at predetermined reading wavelengths, and detecting fluorescence in at least the selected volume; and b) a three - dimensional optical memory comprising the fluorescent photosensitive glass...

...For storing and retrieving information from a three - dimensional fluorescent photosensitive optical memory .

...

...The invention allows for writing to individually selected volumes of the optical memory without affecting neighboring bit locations, which allows smaller volumes to be used for each bit location, thus increasing memory capacity...

...Optical memory (1

Technology Focus:

... Preferred Compositions: The fluorescent photosensitive **memory** comprises glass having rare earths. The rare earths can be ytterbium (Yb) and/or samarium...

...20-80), yttrium (Y)(0-5), and rare earths in oxide form (0-5). The **memory** comprises **vitroceramic** having photosensitizing metals from gold and/or copper, or rare earths from praseodymium (Pr), Dy, Er, Ho, europium (Eu), and/or Tm. The **vitroceramic** further includes (mol%) SiO<sub>2</sub> (10-60), lead fluoride (5-60), antimony oxide (0.05-0...

...can be Er, Ho, and/or Tm, or preferably Pr, Dy, and/or Ho. The **vitroceramic** converts incident infrared radiation into visible light.

Extension Abstract:

... titanium:sapphire or pulse lasers. The generators irradiate the individually selected volume of the optical **memory** with two light beams at two predetermined writing wavelengths. An optical positioning system that can be a confocal microscope (2) is included for focusing the light beams on the optical **memory**. The optical positioning system comprises vertical and radial scanning systems (3, 4) to position the light beams along a vertical and radial axis of the **memory**. A reading system is included for reading information from the **memory**. The reading light beam generators are coherent light beam generators.

...Title Terms: **STORAGE** ;

7/3,K/2 (Item 2 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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012218724 \*\*Image available\*\*

WPI Acc No: 1999-024830/199902

XRPX Acc No: N99-019002

Fluorescent photosensitive material for 3 D optical memory - has data imparted to optical disc by vertical and radial scanning systems via confocal microscope using fluorescent disc material

Patent Assignee: PAVEL E (PAVE-I)

Inventor: PAVEL E

Number of Countries: 083 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9853448	A1	19981126	WO 98R06	A	19980520	199902 B
AU 9876792	A	19981211	AU 9876792	A	19980520	199917
RO 114383	B1	20000228	RO 928	A	19970521	200020
EP 1012833	A1	20000628	EP 98924688	A	19980520	200035
			WO 98R06	A	19980520	
JP 2000512061	W	20000912	JP 98550275	A	19980520	200050
			WO 98R06	A	19980520	

Priority Applications (No Type Date): RO 928 A 19970521

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9853448 A1 E 11 G11B-007/00

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

AU 9876792 A G11B-007/00 Based on patent WO 9853448  
 RO 114383 B1 G11B-007/00  
 EP 1012833 A1 E G11B-007/00 Based on patent WO 9853448  
 Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LI LU  
 MC NL PT SE  
 JP 2000512061 W 15 G11B-007/004 Based on patent WO 9853448

**Fluorescent photosensitive material for 3 D optical memory -**

...Abstract (Basic): The **memory** system is used to produce a write-once-read-many disc that has data in a **three dimensional** structure. To write to a rotating disc, a laser beam (5) is applied to the...  
 ...a confocal microscope. Vertical (3) and radial (4) scanning systems direct the focused beam through **three dimensions** of the disc. The disc has a florescent photosensitive material, e.g. glass or **vitroceramic** as the support for the **memory**. The material suffers a transition producing fluorescence extinction...

...ADVANTAGE - Provides a very large **memory** capacity but storing data in **three dimensions** on a disc...

...Title Terms: **MEMORY** ;

7/3,K/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX  
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008613621 \*\*Image available\*\*

WPI Acc No: 1991-117651/199116

XRPX Acc No: N91-090559

Cooking appliance controller - has microprocessor which compares measured temp. beneath cooking vessel with stored control curve

Patent Assignee: CEPEM CIE EURO EQUIP MENAGER (CEPE )

Inventor: BOYER S; GOUARDO D; PITOT P

Number of Countries: 019 Number of Patents: 009

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9104524	A	19910404				199116 B
FR 2652172	A	19910322				199121
EP 491820	A1	19920701	EP 90914205	A	19900914	199227
			WO 90FR660	A	19900914	
JP 5502128	W	19930415	JP 90513290	A	19900914	199320
			WO 90FR660	A	19900914	
US 5324917	A	19940628	WO 90FR660	A	19900914	199425
			US 92836264	A	19920228	
EP 491820	B1	19941221	EP 90914205	A	19900914	199504
			WO 90FR660	A	19900914	
DE 69015364	E	19950202	DE 615364	A	19900914	199510
			EP 90914205	A	19900914	
			WO 90FR660	A	19900914	
ES 2065549	T3	19950216	EP 90914205	A	19900914	199513
RU 2066969	C1	19960927	SU 5011668	A	19900914	199720
			WO 90FR660	A	19900914	

Priority Applications (No Type Date): FR 8912105 A 19890915

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9104524 A

Designated States (National): CA JP KR SU US

Designated States (Regional): AT BE CH DE DK ES FR GB IT LU NL SE  
EP 491820 A1 F G05D-023/19 Based on patent WO 9104524  
Designated States (Regional): AT BE CH DE DK ES FR GB IT LI LU NL SE  
JP 5502128 W G05D-023/19 Based on patent WO 9104524  
US 5324917 A 13 H05B-001/02 Based on patent WO 9104524  
EP 491820 B1 F 15 G05D-023/19 Based on patent WO 9104524  
Designated States (Regional): AT BE CH DE DK ES FR GB IT LI LU NL SE  
DE 69015364 E G05D-023/19 Based on patent EP 491820  
Based on patent WO 9104524  
ES 2065549 T3 G05D-023/19 Based on patent EP 491820  
RU 2066969 C1 9 A47J-027/62  
...Abstract (Equivalent): cooking surfaces where cooking is done by  
induction. The temp sensor is located under a **vitroceramic** hob...  
...Title Terms: **STORAGE** ;  
?

File 2:INSPEC 1969-2003/Nov W1  
(c) 2003 Institution of Electrical Engineers  
File 6:NTIS 1964-2003/Nov W3  
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File 8:Ei Compendex(R) 1970-2003/Nov W1  
(c) 2003 Elsevier Eng. Info. Inc.  
File 34:SciSearch(R) Cited Ref Sci 1990-2003/Nov W2  
(c) 2003 Inst for Sci Info  
File 35:Dissertation Abs Online 1861-2003/Oct  
(c) 2003 ProQuest Info&Learning  
File 65:Inside Conferences 1993-2003/Nov W2  
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File 94:JICST-EPlus 1985-2003/Nov W2  
(c) 2003 Japan Science and Tech Corp(JST)  
File 95:TEME-Technology & Management 1989-2003/Oct W4  
(c) 2003 FIZ TECHNIK  
File 99:Wilson Appl. Sci & Tech Abs 1983-2003/Oct  
(c) 2003 The HW Wilson Co.  
File 144:Pascal 1973-2003/Nov W1  
(c) 2003 INIST/CNRS  
File 233:Internet & Personal Comp. Abs. 1981-2003/Jul  
(c) 2003, EBSCO Pub.  
File 239:Mathsci 1940-2003/Dec  
(c) 2003 American Mathematical Society  
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec  
(c) 1998 Inst for Sci Info  
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13  
(c) 2002 The Gale Group  
File 603:Newspaper Abstracts 1984-1988  
(c) 2001 ProQuest Info&Learning  
File 483:Newspaper Abs Daily 1986-2003/Nov 13  
(c) 2003 ProQuest Info&Learning  
File 248:PIRA 1975-2003/Nov W2  
(c) 2003 Pira International  
File 5:Biosis Previews(R) 1969-2003/Nov W2  
(c) 2003 BIOSIS  
File 73:EMBASE 1974-2003/Nov W2  
(c) 2003 Elsevier Science B.V.  
File 155:MEDLINE(R) 1966-2003/Nov W2  
(c) format only 2003 The Dialog Corp.  
File 172:EMBASE Alert 2003/Nov W2  
(c) 2003 Elsevier Science B.V.  
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Set	Items	Description
S1	2	VITROCERAMIC AND (MEMORY OR STORAGE)
S2	1412814	3D OR (THREE OR THIRD OR 3) (3N) (DIMENSION? OR SHAPE? OR MO- DEL? OR REPRESENTATION? OR SCENE?)
S3	0	S1 AND S2
S4	2	RD S1 (unique items)
S5	0	VITROCERAMIC(5N) (MEMORY OR STORAGE)
S6	160	VITROCERAMIC
S7	0	S2 AND S6

4/3,K/1 (Item 1 from file: 6)

DIALOG(R)File 6:NTIS

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1989288 NTIS Accession Number: TIB/A96-06429

CERAPOWER Phase 2. Bd. 2. Berichtsteile Unterauftragnehmer.  
Abschlussbericht. (CERAPOWER phase 2. Pt. 2. Reports of subcontractors.  
Final report)

Dornier G.m.b.H., Friedrichshafen (Germany, F.R.).

Corp. Source Codes: 062779000; 9202703

Jul 96 139p

Languages: German

Journal Announcement: GRAI9706

In German.

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NTIS Prices: PC E14

... 10 MWatt system), and KFA (two tasks: 1. Shear experiments and stress relaxation measurements with vitroceramic filler materials, 2. R and D work for SOFC in the field of materials science...

4/3,K/2 (Item 1 from file: 8)

DIALOG(R)File 8:Ei Compendex(R)

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03356900 E.I. Monthly No: EI9201008548

Title: Handling nuclear power station wastes in a pilot plant fitted with an electrical bath oven.

Author: Sobolev, I. A.; Lifanov, F. A.; Stefanovskii, S. V.; Dmitriev, S. A.; Musatov, N. D.; Kobelev, A. P.; Zakharenko, N. V.

Source: Soviet Atomic Energy (English translation of Atomnaya Energiya) v 69 n 4 Apr 1991 p 848-852

Publication Year: 1991

CODEN: SATEAZ ISSN: 0038-531X

Language: English

...Abstract: effective way of disposing of medium-activity wastes is to incorporate them into vitreous or vitroceramic material with high chemical and radiation resistance and good mechanical strength. Laboratory studies have shown...

...nuclear power station waste, can be incorporated reliably into glasses. The leakage rates during prolonged storage are lower than in the cement and bitumen treatments, while the volume retention factor is higher. Also, the method provides fire safety during the processing, transportation, and storage . Certain types of medium-active waste can be vitrified in a pilot plant based on...  
?

File 348:EUROPEAN PATENTS 1978-2003/Nov W02

(c) 2003 European Patent Office

File 349:PCT FULLTEXT 1979-2002/UB=20031106, UT=20031030

(c) 2003 WIPO/Univentio

? ds

Set        Items        Description

S1            3        VITROCERAMIC(5N) (MEMORY OR STORAGE)

S2        196595        3D OR (THREE OR THIRD OR 3) (3N) (DIMENSION? OR SHAPE? OR MO-  
DEL? OR REPRESENTATION? OR SCENE?)

S3            1        S1(10N)S2

S4            2        S1 NOT S3

3/3,K/1 (Item 1 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

(c) 2003 WIPO/Univentio. All rts. reserv.

00568360 \*\*Image available\*\*

**THREE-DIMENSIONAL OPTICAL MEMORY WITH FLUORESCENT PHOTOSENSITIVE MATERIAL  
MEMOIRE OPTIQUE TRIDIMENSIONNELLE A MATIERE PHOTOSENSIBLE FLUORESCENTE**

Patent Applicant/Assignee:

PAVEL Eugen,

Inventor(s):

PAVEL Eugen,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200031733 A1 20000602 (WO 0031733)

Application: WO 98R021 19981125 (PCT/WO R09800021)

Priority Application: WO 98R021 19981125

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES  
FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD  
MG MK MN MW MX NO NZ PL PT RO RÜ SD SE SG SI SK SL TJ TM TR TT UA UG US  
UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE  
CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN  
GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 12861

Fulltext Availability:

Detailed Description

Claims

Detailed Description

... volumes that had not been written to.

The present invention was also tested on a  
three - dimensional optical memory made from fluorescent  
photosensitive vitroceramic doped with terbium. The  
optical memory had the following composition, in weight  
percent: @3OS'02-45PbF2-14A'203-10YF3-1TbF3-0...

Claim

... 5 mole  
percent of said two or more rare earths in oxide form.

91 A three - dimensional optical memory  
comprising fluorescent photosensitive vitroceramic,  
wherein said vitroceramic comprises one or more  
photosensitizing metals and one or more rare earths...

...dysprosium (Dy), erbium. (Er), holmium (Ho),  
europium. (Eu), thulium. (Tm) and combinations thereof.

92 The three - dimensional optical memory of  
fluorescent photosensitive vitroceramic according to  
claim 91 wherein said vitroceramic further comprises,  
in mole percent, about 10% to...

...LnI is selected from the group  
consisting of yttrium (Y) and ytterbium. (Yb).

93 The three - dimensional optical memory of  
fluorescent photosensitive vitroceramic according to  
claim 92 wherein said LnI comprises ytterbium. (Yb) and

- 53  
said Ln2 is...

...whereby said  
vitroceramic is capable of converting incident infrared  
radiation into visible light.

94 The three - dimensional optical memory of  
fluorescent photosensitive vitroceramic according to  
claim 93 wherein said Ln1 comprises yttrium (Y) and  
said Ln2 is selected...

?

4/3,K/1 (Item 1 from file: 349)

DIALOG(R)File 349:PCT 'FULLTEXT

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00552796 \*\*Image available\*\*

APPARATUS, HOLOGRAPHIC PROCESS FOR DUPLICATING OPTICAL AND HOLOGRAPHIC  
MEMORIES, AND MEMORY COPY OBTAINED THEREOF

DISPOSITIF, PROCEDE HOLOGRAPHIQUE DE DUPLICATION DE MEMOIRES HOLOGRAPHIQUES  
ET OPTIQUES, ET COPIE DE MEMOIRE AINSI OBTENUE

Patent Applicant/Assignee:

PAVEL Eugen,

Inventor(s):

PAVEL Eugen,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200016169 A1 20000323 (WO 0016169)

Application: WO 99R013 19990909 (PCT/WO R09900013)

Priority Application: US 98151136 19980910

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES  
FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU  
LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA  
UG US UZ VN YU ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU TJ  
TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI  
CM GA GN GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 11098

Fulltext Availability:

Detailed Description

Claims

Detailed Description

... Example I was carried out in order to obtain an accurate replica of  
the original **memory**.

Example 3

A fluorescent photosensitive **vitroceramic** doped with Thulium was used  
as  
the holographic material. The composition of the holographic material...

Claim

... **memory**, (b) said memory template blank, and (c) said copy  
substrate, as a fluorescent photosensitive **vitroceramic**.

82 The optical **memory** copy of claim 8 1, wherein said recording  
method comprises using fluorescent photosensitive vitroceran-& comprising  
...

...to said vitroceramic and said one or more rare earths imparting  
fluorescent properties to said **vitroceramic**.

83 The optical **memory** copy of claim 82, wherein said recording  
method further comprises selecting said one or more...

...optical memory copy of claim 83 , wherein said recording  
process further comprises using a fluorosilicate **vitroceramic**.

85 The optical **memory** copy of claim 84 , wherein said recording  
method comprises using said vitroceramic further comprising, in...

...90 The optical memory copy characterized in that the copy substrate  
is a fluorescent photosensitive **vitroceramic** , wherein said **memory**

copy contains zones with difference in fluorescence intensities,  
enhancement with more than 5%,  
between recorded...

4/3,K/2 (Item 2 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00462984 \*\*Image available\*\*  
THREE-DIMENSIONAL OPTICAL MEMORY WITH FLUORESCENT PHOTOSENSITIVE MATERIAL  
MEMOIRE OPTIQUE TRIDIMENSIONNELLE A BASE DE MATERIAUX FLUORESCENTS  
PHOTOSENSIBLES

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Detailed Description

Detailed Description

... 2) Nd:YAG laser  
with ?,, =532 nm.

3

Example 3 : A Th doped fluorescent photosensitive **vitroceramic** is used  
for the optical **memory** (wt%), namely.

-30SiO,-45PbF,-14Al,O,-IOYF,- ITbF3 05Sb,O.,-0.OIAG  
The recording and...

?

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? ds

Set	Items	Description
S1	0	VITROCERAMIC(5N) (MEMORY OR STORAGE)
S2	25	VITROCERAMIC
S3	0	S2(S) (THREE OR THIRD OR 3) (3N) (DIMENSION? OR SHAPE? OR MOD- EL? OR REPRESENTATION? OR SCENE?)
S4	0	S2(S) 3D